

WHAT IS CLAIMED IS:

Sub P, 1. A vehicle-mounted communication device comprising:
transmitting/receiving means provided for
communication of information with road-side communication
means located at a road side; and

relay means for relaying encryption information received
from the road side by said transmitting/receiving means to an IC
card which includes storage means for storing user information
regarding a balance of charges and which also includes encryption
means that encrypts and outputs output information based on the
user information and decodes encrypted input information
regarding the user information.

2. A vehicle-mounted communication device according to
claim 1, wherein said relay means relays the output information
encrypted by the IC card to said transmitting/receiving means.

B 3. A vehicle-mounted communication device according to
claim 1 or claim 2, further comprising encryption information
storage means in which the encryption information is temporarily
stored, wherein said transmitting/receiving means stores the
encryption information in said encryption information storage
means and transmits as is the encryption information stored in
said encryption information storage means.

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4. A vehicle-mounted communication device according to ^{claim 1} ~~any one of claims 1 to 3~~, wherein at least one of the IC card and the road-side communication means outputs a portion of the output information in a state without encryption and information display means for displaying the portion of the output information outputted without being encrypted is further provided.

5. A road-to-vehicle communication device comprising:
a vehicle-mounted communication device according to ^{claim 1} ~~any one of claims 1 to 4~~; and
road-side control means being located at a road side, including road-side communication means provided for intercommunication of information with the vehicle-mounted communication device, and also including road-side encryption means for encrypting transmitted information and decoding received information.

6. A road-to-vehicle communication device according to claim 5, wherein road-side encryption means of said road-side control means installed at an entrance gate effects encryption of transmitted information and road-side encryption means of said road-side control means installed at a toll reception gate effects only decoding of received information.

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7. A road-to-vehicle communication device according to claim 5 ~~or claim 6~~, wherein the transmitted information is accounting information regarding accounting processing of charged facilities.

8. A road-to-vehicle communication device comprising:
road-side control means being located at a road side, including road-side communication means provided for intercommunication of information with vehicle-mounted communication means, and also including first encryption means for encrypting transmitted information and decoding received information, with a first electronic key;

information control means including information transfer means which stores therein user information regarding at least one of a vehicle and a user and through which information is mutually transferred with respect to the vehicle-mounted communication means, and also including second encryption means for encrypting output information and decoding input information, with a second electronic key; and

vehicle-mounted control means being installed on a vehicle side, including vehicle-mounted communication means provided for intercommunication of information with respect to the road-side communication device and for mutual transfer of information with respect to said information control means, and also including third encryption means which, during the

communication of information, encrypts transmitted information and decodes received information with the first electronic key, and which during the transfer of information, encrypts output information and decodes input information with the second electronic key.

9. A road-to-vehicle communication device according to claim 8, wherein each group of said first encryption means and the road-side communication means, said second encryption means and the information transfer means, and said third encryption means and the vehicle-mounted communication means are provided on the same substrate.